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Original Research Article

## The Effect of Work Safety and Health Training Towards Workers Safety Behavior in Wolasi Community Health Center of South Konawe Regency

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**Abstract:** Puskesmas (Community Health Center) are workplaces that have occupational safety and health risks to health workers. The level of occupational safety and health risks can be significantly minimized by implementing safety behaviors. This study aims to determine the effect of OSH training (Occupational Health and Safety) based on the introduction of potential hazards to the safety behavior of officers. An observational study was conducted to identify potential hazards as training material as well as quasi-experimental experiments on 20 health workers who took injections at the Puskesmas in February - April 2020. Data were collected using an observation checklist sheet. There are 5 potential hazards in the low-risk category, 12 potential moderate risks and 18 potential high-risk hazards in the Wolasi Puskesmas. Furthermore, there was a statistically significant effect between interventions before and after the intervention in terms of the use of personal protective equipment ( $p = 0.000$ ) and the use of equipment and equipment ( $p = 0.003$ ). While there was no statistically significant effect between intervention and after the intervention in terms of the respondent's work position ( $p = 0.164$ ). According to the results of this study, training based on the introduction of potential hazards increases officer safety behavior.

**Keywords:** Introduction of Potential Dangers, Safety Behavior, Health Officers, OSH Training.

## INTRODUCTION

Puskesmas (Community Health Center) as a health service institution is one of the workplaces that has a risk to occupational safety and health both in human resources (Health Care Facilities), patients, patient companions, visitors, and communities around the health center environment [1]. Health care facilities around the world employ more than 59 million workers who are exposed to complex health and safety hazards every day [2]. The Center for Disease Control (CDC) states that from 2008 to 2018 there have been 65 outbreaks of the hepatitis virus related to health care. Every year it is assumed that there have been 385,000 percutaneous injuries (needle punctures, wounds, punctures, and other injuries with sharp objects) at US health care facilities [3]. Percutaneous injury at the health facility also resulted in hepatitis in Indonesia, from a total of 5,870 cases of hepatitis, 40% were known to have originated from the use of syringes [4].

In Puskesmas (Community Health Center), unsafe behaviors among community health workers increase the risk of accidents and occupational diseases, so it is necessary to apply safety behaviors to officers. Accidents, injuries, and illness at work are related to worker behavior. This is based on Heinrich's theory which states that 73% of workplace accidents are "human failure". Furthermore, Heinrich categorizes it, to the point that 88% of all accidents, injuries, and illnesses are caused by workers' mistakes, namely unsafe behavior [5]. Descriptive findings have shown that 21% of

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health professionals report one or two injuries during the last 12 months in which the occurrence of injuries was caused due to unsafe behavior [6].

Safety behavior is influenced by integrated safety intervention practices, where the first level is management intervention and the second level is technical and human intervention [7]. Training as an intervention is widely recognized as an important component of occupational hazard control and risk management programs. The main impact of training is the prevention or reduction of illness, injury or death, and the related direct and indirect costs [8]. Proper risk assessment is an important prerequisite for interventions focused on safety behavior [9].

Health workers who experience hepatitis in Wolasi Puskesmas are the biggest cases in the Konawe Selatan area. Therefore, there is a need for occupational safety and health training for health workers to reduce occupational exposure to syringe injuries.

## METHODS

### Research Design

This type of research is observation with passive participatory design and quasi-experimental design with re-treatment. This research was conducted at the Wolasi Puskesmas Selatan Konawe Regency in February-April 2020.

### Population and Sample

The population is all health workers in the Wolasi Puskesmas. A sample of 20 people, selected by purposive sampling that has met the inclusion criteria, namely screening for hepatitis, direct contact with patients use syringes/sharp objects, risk of exposure to the substance of the patient's body, and require Personal Protective Equipment.

### Collecting Data

Data were collected using an observation checklist sheet consisting of two parts namely the first part consisting of the introduction of potential hazard data for training material and the second part consisting of a checklist of the safety behaviors of officers when performing injection actions.

### Data Analysis

Data on the introduction of potential hazards are processed using hazard identification, risk assessment and risk control based on hazard identification, risk assessment and risk control in accordance with Minister of Health Regulation No. 52 concerning K3 in health service facilities. For safety behavior, it is processed using SPSS for Windows 22.

## RESULTS

### Introduction of Potential Danger

Of the seven rooms in the Wolasi Puskesmas that were identified as potential hazards, risk assessments, and risk controls were known to each room having potential hazards. There are potential physical, chemical, biological, psychosocial, ergonomic and occupational hazards in Puskesmas Wolasi with details of 5 potential hazards in the low-risk category, 12 potential hazards in the moderate risk category, and 18 potential hazards in the high-risk category.

### Occupational Safety and Health Training

The training program is designed and implemented by researchers to increase the knowledge and awareness of health workers about occupational safety and health. The training materials and pocketbooks provided were based on the results of the development of the introduction of potential hazards conducted by researchers and literature studies and were revised by 2 experts in the field of K3 and public health. The training is carried out for 1 day for 10 JPL (Number of Learning Hours) with training materials focused on K3 in health service facilities, potential hazards, and controlling potential hazards at the Wolasi Health Center. Meanwhile, to control the intervention for 30 days, a pocketbook is given every week with the material of the book focused on the implementation procedures, personal protective equipment, work position and equipment, and equipment when taking injection actions.

### Characteristics of respondents

**Table-1: Distribution of staff characteristics at Puskesmas Wolasi**

Variable	Type of Respondent	
	n	%
<b>Age</b>		
20 – 29 Years Old	13	65
30 – 39 Years Old	4	25
40 – 49 Years Old	2	10
≥ 50 Years Old	1	5
<b>Sex</b>		
Male	0	0
Female	20	100
<b>Type of employment</b>		
Doctor	2	10
Nurse	4	20
Midwife	13	65
Health Analysis	1	5
<b>Years of service</b>		
<4 years	14	70
≥ 4 years	6	30
Source: Primary Data 2019		

Table-1 shows the distribution of Puskesmas (Community Health Center) staff is dominated in the age group of 20-29 years which is 13 people (65%), overall the sex of the respondents is female that is equal to 20 people (100%), most types of personnel are midwives which are 13 people (65%) and the distribution of tenure based on table 15 is known that the most is <4 years, 14 people (70%).

### Safety Behavior

**Table-2: Effects of Occupational Safety and Health Training (K3) on actions based on the Use of Personal Protective Equipment (PPE) Officers in the Wolasi Puskesmas**

Personal protective equipment	Statistic Value		
	N	SD	Nilai P
Pre test	20	22,0	0,000
Post test	20	12,5	
Source: Primary Data 2019			
Test: Wilcoxon Signed Ranks Test			

Table-2 shows the results of statistical tests obtained p-value (0,000) <0.05, meaning that there is an influence of occupational safety and health training on the use of personal protective equipment officers at the Wolasi Health Center.

**Table-3: Effect of Occupational Safety and Health Training (K3) on the use of equipment and Equipment Officers in Puskesmas Wolasi**

Equipment and Supplies	Statistic Value		
	n	SD	Nilai P
Pre test	20	19,5	0,003
Post test	20	19,6	
Source: Primary Data 2019			
Test: Wilcoxon Signed Ranks Test			

Table-3 shows the results of the statistical test obtained p-value (0.03) <0.05, meaning that there is an influence of occupational safety and health training on the use of equipment and equipment of officers at the Wolasi Health Center.

**Table-4: Effect of Occupational Safety and Health Training (K3) on the Work Position of Officers in the Wolasi Puskesmas**

Work Position	Statistic Value		
	n	SD	Nilai P
Pre test	20	23,8	0,164
Post test	20	25,3	

Source: Primary Data 2019  
Test: Wilcoxon Signed Ranks Test

Table-4 shows the results of statistical tests obtained p-value (0.164) > 0.05, meaning that there is no effect of occupational safety and health training on the work position of officers at the Wolasi Puskesmas

## DISCUSSION

The results of the introduction of potential hazards and risk control in the Wolasi Health Center show that the Emergency Room (UGD), general poly, dental clinic, MCH (Maternal and Child Health) & MTBS (Integrated Management of Toddler Sickness), immunization, laboratory, and maternity have potential hazards with low, medium and high risk, so it is necessary to control risk. There are potential physical, chemical, biological, psychosocial, ergonomic and occupational hazards at the Wolasi Health Center with details of 5 potential hazards in the low-risk category, 12 potential hazards in the moderate risk category, and 18 potential hazards in the high-risk category. After the introduction of potential hazards by identifying potential hazards, conducting risk assessments, and recommending risk control, the researchers then conducted a literature study related to the training to be carried out. Then based on the introduction of potential hazards and study of the literature, researchers developed training materials and pocketbooks. Tsutsumi *et al.*, [9] states that training conducted based on the results of a risk assessment can improve safety behavior.

In this study, there are seen several aspects of behavior that significantly experience the effect of occupational safety and health training. Behavior is a person's response or reaction to a stimulus (stimulation from outside) [10]. Safety behavior is influenced by antecedents and consequences [11]. Improving safety behavior requires self-awareness efforts by conducting socialization or training as an antecedent. Training is the main way to prevent injury and maintain health workers in making health efforts [12]. The success of safety behavior interventions by providing educational programs in the form of training is also seen in research conducted by Bijani *et al.*, [13] where there is an effect of training on nurses' safety behaviors as many as 24 nurses (40%) were exposed to syringe injuries before the intervention, and the number was reduced to 9 nurses (15%) after the intervention.

The use of personal protective equipment that changes after intervention in research focuses on the use of personal protective equipment (masks, gloves, and aprons) when injecting. This is in line with research Sari *et al.*, [14] which states that there is an influence of training on nurses' behavior in the use of PPE (Personal Protective Equipment) ( $p < 0.05$ ). But this research is not in line with van der Molen *et al.*, [15] which said that there was no effect of training on the behavior of the use of gloves and glasses from time to time ( $p > 0.05$ ).

This research also focuses on examining and using the right equipment and equipment in the right way when injecting. In line with Miner & Ayuba [16] which states that there is an influence of training on the recapping technique on syringes ( $p < 0.05$ ). Health care facilities must ensure the availability of adequate supplies of equipment and disposable equipment and providers ensure that staff use new equipment for each action [17].

Health workers in Puskesmas Wolasi often carry out unergonomic work positions when taking care of patients. Training on ergonomics provides a large role in realizing safety behavior. Training makes workers have the right skills in working ergonomically so that workers feel comfortable doing their jobs [18]. The expected work position changes in this study focus on the ergonomic position of the officer when the injection action. Lifting manually, awkward, and hunched positions increase the risk of back problems in health workers [19]. However, this research is not in line with Salah *et al.*, [20] which showed that the implementation of body mechanics training ( $p < 0.05$ ) improved safety behavior, so that it was positively correlated with the intensity of back pain in nurses.

## CONCLUSION

Based on the results of the study concluded that there is an influence of occupational safety and health training based on the introduction of potential hazards to the safety behavior of officers based on the use of personal protective equipment, equipment and equipment. But in terms of safety behavior based on the work position of the officer has no effect. Efforts to establish a K3/OSH team (Occupational Health and Safety) at the puskesmas (Community Health Center) need to be carried out so that the safety behavior of officers can be improved.

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